REMARKS

Claims 1-43 remain pending in the application. Claims 1, 3, 4, 9, 10, 13, 14 and 16 are amended. Reconsideration of the rejection and allowance of the pending application in view of the following remarks are respectfully requested.

In the Official Action, the Examiner rejects claims 1, 4, 10, 14 and 16 under 35 U.S.C. §103(a) as being unpatentable over Brederveld et al. (U.S. Patent No. 5,898,679) in view of King (U.S. Patent Application Publication No. 2009/0154390).

Applicants' claim 1, as currently amended, recites a method for use in a radio communication system which includes a first transceiver, a second transceiver and a repeater. The method includes: upon receiving data from one of either the first or second transceivers, transmitting, by the repeater, a repeat flag; then transmitting, by the repeater, the data received from the one of either the first or second transceivers; and then transmitting, by the repeater, an overall acknowledge status to inform all transceivers in the system of the success or failure of receipt of the data transmitted by the repeater.

Applicants' claim 4, as currently amended, recites a method for transmitting and receiving data for use in a network of devices including a first transceiver and a repeater. The method includes, inter alia,: transmitting, by the first transceiver, data in a first time slot; retransmitting, by the repeater, the data transmitted in the first time slot; and transmitting, by the repeater, an overall acknowledge status to the network to inform all transceivers in the network of the success or failure of receipt of the retransmitted data.

Applicants' claim 10, as currently amended, recites a radio communication system which includes a first transceiver, a second transceiver and a repeater. Upon receiving data from one of either the first or second transceivers, in a first time slot, the repeater transmits a repeat flag; then

in a third time slot, the repeater transmits the data received in the first time slot; and transmits an overall acknowledge status to all transceivers in a last time slot after the third time slot to inform all transceivers in the system of the success or failure of receipt of the data transmitted by the repeater.

Applicants' claim 14, as currently amended, recites a repeater for use in a radio communication system including at least two transceivers. Upon receiving data in a first time slot, the repeater transmits a repeat flag, then transmits in a third time slot, data received in the first time slot, and then transmits in a last time slot, an overall acknowledge status to inform each of the transceivers of the success or failure of receipt of the data transmitted by the repeater.

Applicants' claim 16, as currently amended, recites a transceiver for use in a radio communication system including at least one other transceiver and a repeater. Upon receiving a repeat flag, the transceiver suspends further action until it receives from the repeater, data that was originally transmitted by the at least one other transceiver, and an overall acknowledge status. The overall acknowledge status informs each of the transceivers of the success or failure of receipt of the data from the repeater.

Brederveld's wireless computer network utilizes a dedicated relay station RS 150 to repeat message traffic. However, Brederveld's relay station RS 150 does not transmit an overall acknowledge status which informs all mobile stations in the network of the success or failure of receipt of the data transmitted by the relay station RS.

King discloses a wireless network which utilizes a bi-directional packet repeater 32. However, King's packet repeater 32 does not transmit an overall acknowledge status which informs all clients in the network of the success or failure of receipt of data transmitted by the packet repeater 32.

In paragraph [0044], King discloses that when a retransmitted wireless signal is received, the intended recipient transmits an acknowledgment back to the original source of the wireless signal through the bi-directional packet repeater. However, King does not disclose or suggest that the acknowledgment is sent to all transceivers in the network. Rather, King merely discloses that the acknowledgment is transmitted back to the original source of the wireless signal.

For at least these reasons, Applicants respectfully submit that the combined teachings of Brederveld et al. and King does not render obvious the subject matter of Applicants' independent claims 1, 4, 10, 14 and 16, and request that the Examiner withdraw the rejections under 35 U.S.C. §103(a).

In the Official Action, the Examiner rejects claims 2, 3, 5, 11, 15 and 17 under 35 U.S.C. §103(a) as being unpatentable over Brederveld et al. in view of Fujii et al. (U.S. Patent Application Publication No. 2002/0106011). Applicants submit that Fujii et al. fails to overcome the above-noted deficiencies of Brederveld et al. with respect to independent claims 1, 4, 10, 14 and 16

Fujii et al. discloses a communication system which includes a master node N10 and slave nodes N11-N13. See, e.g., Fig. 3 of Fujii et al. Fujii et al. discloses that the master node N10 relays data between the slave nodes. However, Fujii's master node N10 does not transmit an overall acknowledge status which informs all slave nodes in the communication system of the success or failure of receipt of data transmitted by the master node N10.

Accordingly, Applicants request that the Examiner withdraw the rejections of claims 2, 3, 5, 11, 15 and 17, in view of their dependency from claims 1, 4, 10, 14 and 16.

In the Official Action, the Examiner rejects claims 6-9, 12, 13 and 18 under 35 U.S.C. §103(a) as being unpatentable over Brederveld et al. in view of Fujii et al. and Hwang et al. (U.S.

Patent Application Publication No. 2003/0108013).

Applicants submit that Hwang et al. fails to overcome the above-noted deficiencies of Brederveld et al. and Fujii et al. with respect to independent claims 4, 10 and 16, as there is no discussion of a repeater in Hwang et al. Accordingly, Applicants request that the Examiner withdraw the rejection of claims 6-9, 12, 13 and 18, in view of their dependency from claims 4, 10 and 16.

In the Official Action, the Examiner rejects claims 19, 27, 35 and 37 under 35 U.S.C. §103(a) as being unpatentable over Song et al. (U.S. Patent Application Publication No. 2004/0146013) in view of Scott et al. (U.S. Patent No. 5,796,738), and rejects claims 20-26, 28-34, 36 and 38-43. Applicants respectfully traverse the rejection for at least the following reasons.

Song is directed to a repeater in a conventional point to point wireless communication system utilizing time division duplexing and carrier sense multiple access/collision avoidance CSMA/CA. As described in paragraph [0034], such repeaters are susceptible to self-oscillation when signals are received on the up-link and down-link (i.e., a collision). Song is directed to the development of a repeater using a single switched directional amplifier so that only one link at a time is amplified. See also paragraph [0056] in which Song describes that if up and down-link transmissions are detected (i.e., a collision) then the control circuit selects *either* an up or a down-link direction to amplify *but not both*. There is no attempt to modify the message or transmit a collision signal. Rather, the repeater chooses one of the transmissions to retransmit. For example, if the repeater chooses the up-link direction, then the transmitting device on the down-link side will detect a transmission from the repeater (coming from the up-link side) whilst it is attempting to transmit to the up-link side via the repeater and thus may sense a collision and

take action. However, the transmitter on the up-link side will be unaware of the collision as the repeater chooses to retransmit its transmission and has not informed it of a collision. Thus, it is submitted that firstly there is no teaching that the repeater transmits a data sequence to *each* transceiver and further there is no teaching that this data sequence instructs each transceiver to *cease* its respective transmission.

The Examiner suggests that these deficiencies may be overcome by the teachings of Scott, and asserts that Scott teaches the use of a repeater which transmits a data sequence instructing each transceiver to cease its respective transmission in order to resolve a collision. First, Applicants submit that Scott is directed to a wired Ethernet network rather than a wireless point to multipoint communications network. There are significant differences between wired and wireless networks, with wireless networks typically being more challenging environments than wired networks and thus, application of wired protocols to wireless networks is not straight forward.

It is further submitted that like Song, Scott fails to teach that the repeater transmits a data sequence to each transceiver, and further, that this data sequence instructs each transceiver to cease its respective transmission. Scott is directed to a repeater for use across network boundaries which uses an uplink module 44 in which a remote network is emulated as a data device in the local network. To this end, Scott teaches the use of a buffer (or buffers 66 and 72) for storing messages prior to retransmission. If the buffer is full or unable to store an incoming message, whether from the external network via link 60 or from a local device via link 58, then the controller either initiates a collision signal over collision line 56 to local devices, or generates a local jam signal over link 60 if the message was incoming from the external network or over link 58 if the message originated from a device in the local network (col. 8, lines 27-35). To

summarize "Uplink module 44 generates a collision indication that is ultimately transformed into a jam signal for transmission to the transmitting data device *in either local network 36 or local network 34*" (col. 8, lines 64-67).

Further, there is no teaching that the jam signal is a data sequence that instructs each transceiver to cease its respective transmission. Rather, Scott defines a jam signal as "any communication received by data device 22 while transmitting a message" (col. 7, lines 25-27). That is, any signal on the receive line of a device is treated as a collision indicator. In the case of a wireless environment, this approach is likely to lead to degradation in the throughput of the network as devices would be susceptible to interpreting an interfering signal as a collision indicator and thus cause the device to cease transmission and back off. That is, not only does Scott fail to teach the claimed subject matter, but as it is directed to a wired environment, an application in a wireless setting would actually lower the efficiency of the wireless network, and accordingly, one would not be motivated to combine Song and Scott.

Further, the deficiencies of Song and Scott are not remedied by Molle. Molle is directed to increasing the efficiency of collision resolution in a wired Ethernet system. As described at col. 1, line 64 to col. 2, line 6, in standard Ethernet, a transmitting host upon detecting a collision (e.g., by listening to its receiver port) transmits a 32-bit jamming signal (after transmission of the preamble and start frame delimiter). The host must then wait for this jamming signal to propagate to the end of the network and back again before it can initiate a further transmission. Molle describes a method for reducing the duration of a collision and thus increase the efficiency of the network. Specifically, Molle teaches that devices may mask incoming signals if a collision is detected and the incoming signal is greater than a minimum length. In relation to an Ethernet repeater comprising a core and multiple ports, Molle teaches that on detection of a

collision, the core of the repeater sends a jam signal to the repeater ports. The repeater ports which are receiving the colliding signals then ignore any further inbound signal (i.e., from the hosts) so that on cessation of the incoming signal, they can be reset. The repeater can also retransmit any incoming signals arriving on other ports while the original (now ignored) colliding signals are still arriving (see col. 5, lines 24-53 and col. 13, lines 37-44).

Thus, Molle is directed specifically at Ethernet systems and fails to teach that the repeater transmits a data sequence instructing *each* transceiver to cease its respective transmission. Rather, Molle teaches that the repeater should simply ignore the continuing transmission from the transceivers. Such a solution is thus highly specific to a wired environment and not directly applicable to a wireless environment.

Thus, it is submitted that like Song, Scott and Molle both fail to suggest the feature of transmitting "a data sequence instructing each transceiver to cease its respective transmission", as recited in claims 19, 27, 35 and 37. It is further submitted that the difference between wired and wireless environments are such that one would not have been motivated to combine Song with Scott and/or Molle. Accordingly, Applicants respectfully request that the Examiner withdraw the rejections of claims 19-43.

Based on the above, it is respectfully submitted that this application is in condition for allowance, and a Notice of Allowance is respectfully requested.

SUMMARY AND CONCLUSION

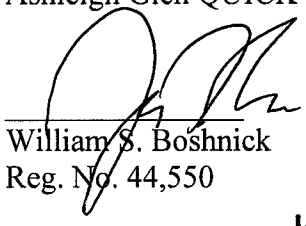
Reconsideration of the outstanding Official Action, and allowance of the present application and all of the claims therein are respectfully requested and believed to be appropriate. Applicants have made a sincere effort to place the present invention in condition for allowance and believe that they have done so.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should an extension of time be necessary to maintain the pendency of this application, including any extensions of time required to place the application in condition for allowance by an Examiner's Amendment, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully Submitted,
Ashleigh Glen QUICK et al.



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